UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

NASDAQ, INC.; NASDAQ ISE, LLC; AND FTEN, INC.;	:	Civil Action 3:17-cv-06664-BRM-DEA
	:	
Plaintiffs,	:	**MEMORANDUM OF LAW IN**
	:	**SUPPORT OF MIAX'S MOTION TO**
v.	:	**DISMISS COMPLAINT**
	:	
MIAMI INTERNATIONAL HOLDINGS, INC., et al.,	:	
	:	
	:	
Defendants.	:	

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I.   INTRODUCTION

Nasdaq[1] has sued New Jersey-based Miami International Holdings, Inc. ("MIH") and its corporate subsidiaries, companies with an aggregate annual payroll of over thirty million dollars. Nasdaq's complaint alleges patent infringement and veers into allegations of theft, accusing former Nasdaq employees of taking "trade secrets" with them to MIAX—***over six years ago***.[2]   Nasdaq has sued Miami International Securities Exchange, LLC ("MIAX Options") and MIAX PEARL, LLC ("MIAX PEARL")—two competing registered national securities exchanges. Nasdaq has also sued Miami International Technologies, LLC ("MIAX Technology"), MIAX's technology company, which competes with Nasdaq—bidding directly against them—for large technology contracts. MIAX Technology, with its award-winning technology, has become a serious competitive threat to Nasdaq's extremely profitable technology business.[3]

More than six years prior to Nasdaq filing its complaint, high level Nasdaq executives, such as Tom Wittman, Executive Vice President and Head of Global

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[1] "Nasdaq" refers, collectively, to Plaintiffs NASDAQ, Inc., NASDAQ ISE, LLC, and FTEN, Inc.

[2] The MIH Holdings entities are referred to collectively as "MIAX."

[3] *See* Exh. 1, Nathaniel Popper, *After Mishaps, Nasdaq Loses Standing to Rivals*, N.Y. TIMES (Aug. 23, 2013), https://dealbook.nytimes.com/2013/08/23/after-mishaps-nasdaq-loses-standing-to-rivals/ ("One source of profits [for Nasdaq], somewhat unexpectedly given this week's [technical failures], has been Nasdaq's trading platform technology….").

Trading, knew that the "Nasdaq-to-MIAX Employees" (or "NTMEs" in Nasdaq's complaint) were going to MIAX. Exh. 2, emails between Wittman and NTMEs. Additionally, the departure of these employees for MIAX made national news in April 2011.[4] The Dow Jones Newswire reported that MIAX "has been in the works for over two years, planned by a cadre of former [PHLX] executives" and the "NTMEs" joined MIAX as "systems developers" who "previously worked in technology-oriented jobs for Nasdaq OMX."[5]

If the true purpose of the complaint is reprisal for the departure of employees that occurred ***more than six years ago***, then Nasdaq has chosen to serve its revenge not merely cold, but frozen to death. Many of Nasdaq's allegations are purportedly based on Nasdaq documents more than six years old, and many MIAX documents cited in the complaint are inexplicably old, suggesting that Nasdaq drafted the complaint long ago and has been sitting on it.[6] As a company with a market capitalization of over twelve billion dollars, Nasdaq's dubious claims against award-winning MIAX raise serious questions about *why* it was filed shortly after MIAX entered into a publicly-known equity rights program in July 2017 that had a target goal of increasing MIAX's market share to ten percent (10%) of national market

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[4] Exh. 3, Jacob Bunge, *STREET MOVES: Nasdaq OMX Technologists Move to Miami*, DOW JONES BUSINESS NEWS, Apr. 29, 2011.
[5] *Id.*
[6] *See* Dkt. 1, ¶ 95 (relying on a May 2015 fee schedule, even though MIAX's website updates these schedules generally monthly).

share, and at a time when MIAX was competing head-to-head with Nasdaq on several large third-party technology contracts.

Nasdaq's stale case is fundamentally flawed and should be dismissed. It asserts trade secret allegations expressly precluded by statute. It asserts a patent claim that was already invalidated in prior litigation. And it asserts patents of a kind that one of the plaintiffs called "nothing more than the automation of … methods practiced in the financial services industry for decades and, as such, are clearly invalid under 35 U.S.C. § 101 for covering an abstract idea."[7] Every asserted patent is merely an abstract financial concept—often performed manually in the past—implemented on a conventional, general purpose computer, and adds nothing more. MIAX asks the Court for dismissal, the bases for which are summarized as follows:

Patent Count	Patent Claim Invalidated in Prior Litigation	Failure to Plead Plausible Patent Infringement Claims	Patent Claims are Invalid as Patent-Ineligible
I	✓	✓	✓
II-VII		✓	✓

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[7] Exh. 4, ISE's Motion to Stay Proceedings at 2, *Chicago Board Options Exchange, Inc., v. International Securities Exchange, LLC*, 1:13-cv-01339 (S.D.N.Y. Sept. 11, 2013).

Trade Secret Count	Statute of Limitations	Entity Didn't Exist	Effective Date of the Statute	Nasdaq Admits Trade Secret Didn't Exist When the Statute was Enacted
VIII (DTSA)	✓			✓
IX (NJTSA)	✓		✓	
X (Common Law)	✓	✓		

II.   THE TRANSITION OF CERTAIN EMPLOYEES FROM NASDAQ TO MIAX

Nasdaq's allegations lean heavily on several individuals—"NTMEs" in Nasdaq's complaint—who left Nasdaq for MIAX, not long after Nasdaq acquired the Philadelphia Stock Exchange ("PHLX") in 2008. *E.g.,* Dkt. 1, ¶¶ 28–32. This move should not have surprised Nasdaq, since Nasdaq instituted mass layoffs and marginalized PHLX employees post-acquisition. Nasdaq had become known for breakdowns and trading interruptions, leading some to conclude that "Nasdaq has been too busy promoting itself as the home of all those high-tech wonder companies to bother spending enough money on the technology it needs."[8]   In recent times, Nasdaq made the news for its inability to handle the Facebook IPO—resulting in a

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[8] Exh. 5, Floyd Norris, *Nasdaq's Sign Is Great, but Does Its Market Measure Up?*, N.Y. TIMES (Mar. 17, 2000), http://www.nytimes.com/2000/03/17/business/nasdaq-s-sign-is-great-but-does-its-market-measure-up.html; Exh. 6, Saul Hansell, *Bugs and Squirrels Gnaw Away Nasdaq's Image*, N.Y. TIMES (Aug. 3, 1994), http://www.nytimes.com/1994/08/03/business/bugs-and-squirrels-gnaw-away-nasdaq-s-image.html.

$10,000,000 fine from the Securities and Exchange Commission due to "poorly designed systems…[which] produced serious and pervasive violations of fundamental rules governing markets."[9,10]

In 2015, while MIAX was enjoying a market share increase of over seventy percent (70%), Nasdaq went to extraordinary lengths to lure MIAX's Chief Information Officer ("CIO"), a NTME accused of misconduct in Nasdaq's complaint, back to Nasdaq. If the behavior of the NTMEs was as Nasdaq alleges, why would Nasdaq want to hire the highest ranking NTME technology executive? That Nasdaq's attempt to hire MIAX's CIO occurred long after Nasdaq had known of every pled "fact" underlying its trade secret allegations raises more questions. Having its offer to MIAX's CIO rebuffed, Nasdaq went to its contingency plan and attacked its competition the only other way it could; by proceeding with this stale and flawed action.

The NTMEs, including MIAX's CIO, came to MIAX seeking an innovative and collaborative culture, and they found it. The NTMEs innovated at MIAX and the United States Patent Office awarded multiple patents for new MIAX technology. *E.g.,* Exh. 8, U.S. Patent Nos. 8,868,461; Exh. 9, 8,874,479. The industry has

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[9] Exh. 7, Sarah N. Lynch, *Nasdaq to pay $10 million to settle SEC charges from Facebook snafu*, REUTERS (May 29, 2013), http://www.reuters.com/article/us-nasdaq-sec-facebook/nasdaq-to-pay-10-million-to-settle-sec-charges-from-facebook-snafu-idUSBRE94S0YQ20130529.
[10] Exh. 1, Popper, *supra* note 3.

recognized this innovation as well, with MIAX being twice named the "Best Infrastructure/Technology Initiative by an Exchange/ATS" and once named the "Best Overall Exchange" by the Wall Street Letter.[11]   MIAX is proud of the ground-up technology developed to launch its exchanges and denies every Nasdaq allegation that MIAX's technology is not its own.

III.   ARGUMENT

A.   THE TRADE SECRET ALLEGATIONS SHOULD BE DISMISSED

i.   Nasdaq's Trade Secret Claims Should Be Dismissed under the Statute of Limitations (Counts VIII-X)

Nasdaq's Counts VIII-X are barred by the statute of limitations. At its core, Nasdaq's trade secret case is based on the claim that four NTMEs emailed themselves alleged "Nasdaq Trade Secrets" "for later use and access at MIAX." Dkt. 1, ¶¶ 28–32. Nasdaq alleges that this activity occurred between August 2010 and January 2011 for NTME No. 1. For NTMEs 2–4, Nasdaq omits specific dates from its pleading. *But see* Dkt. 1, ¶ 28 ("By fall of 2011, more than a dozen NTMEs had joined MIAX."). However, Nasdaq fails to plead any relevant

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[11] Exh. 10, Press Release, MIAX Options, MIAX Options Exchange Wins 2015 Institutional Trading Award for Best Infrastructure / Technology Initiative (Feb. 6, 2015); Exh. 11, Press Release, MIAX Options, MIAX Options Exchange Wins 2016 Institutional Trading Award for Best Infrastructure/Technology Initiative (Feb. 25, 2016); Exh. 12, Press Release, MIAX Options Named Best Overall Exchange at Fund Technology and WSL Awards 2017 (Feb. 15, 2017).

conduct less than six years old, or that any "Nasdaq Trade Secret" was obtained from Nasdaq through any means other than the emails of paragraphs 29–32.

Counts VIII and IX allege violations of the Defend Trade Secrets Act of 2016 ("DTSA") and the New Jersey Trade Secrets Act ("NJTSA"). Under the DTSA, an action for trade secret misappropriation may not be brought later than three years after the date the misappropriation is discovered or should have been discovered "by the exercise of reasonable diligence." 18 U.S.C. § 1836(d). A continuing misappropriation constitutes a single claim of misappropriation, *i.e.*, the statute of limitations runs from the date the misappropriation was or should have been discovered, not from any alleged subsequent use or disclosure. *Id.* The statute of limitations for the NJTSA is substantively identical. *See* N.J. Stat. Ann. § 56:15-8.

The statute of limitations for Nasdaq's common law trade secret misappropriation claim (Count X) is—at most—six years. N.J. Rev. Stat. § 2A:14-1 (2013); *Blystra v. Fiber Tech Grp., Inc.*, 407 F. Supp. 2d 636, 644-45 (D.N.J. 2005). Nasdaq bears the burden of showing that the discovery rule tolls the limitations period. *O'Keeffe v. Snyder*, 83 N.J. 478, 498 (1980).

These causes of action are time-barred because Nasdaq alleges that facts sufficient to be aware of its trade secret claim have always been in its own possession—the alleged emails transmitting information "for later use and access

at MIAX" have been on Nasdaq's own servers the whole time, since 2010 and early 2011. Dkt. 1, ¶¶ 29–32 ("after a preliminary review and investigation of [the NTME's] emails retained on Nasdaq servers"); *see also* Exh. 3, Bunge, *supra* note 4; Exh. 2, Emails between Wittman and NTMEs. Thus, Nasdaq's Counts VIII–X are barred by the statute of limitations.

ii.   Nasdaq's Count X under New Jersey Common Law Trade Secret Protection Must Be Dismissed against MIAX PEARL

Nasdaq's Count X is an alleged violation of New Jersey's trade secrets common law against all Defendants. *See* Dkt. 1, at 2 (defining "MIAX"), ¶¶ 157–173. Nasdaq limits this claim to conduct "occurring prior to January 5, 2012." Dkt. 1, ¶ 169. MIAX PEARL LLC, however, did not exist until February 11, 2016. Exh. 13 (from Delaware Division of Corporations). Having failed to state a claim, Count X should be dismissed with prejudice as to MIAX PEARL.

iii.   Nasdaq's Count IX under the NJTSA Must Be Dismissed Because It Ignores the Effective Date of the Statute

Nasdaq's claim under the NJTSA must be dismissed because, if it is anything, it is an allegation of continuing misappropriation that began prior to the effective date of the NJTSA. It is thus barred under the statute, which expressly excludes misappropriations that occurred prior to enactment:

> This act shall take effect immediately, and does ***not*** apply to misappropriation occurring prior to the effective date. With respect to a continuing misappropriation that began prior to the effective date,

the act also does ***not*** apply to the continuing misappropriation that occurs after the effective date.

2011 N.J. Laws 161 (emphasis added). The effective date is January 5, 2012. *Id.*

Continuing misappropriation is "the continuing use or disclosure of a trade secret after that secret was acquired by improper means…" and "[t]hus, to commit a continuing misappropriation, a party must wrongfully misappropriate a single trade secret and then proceed to utilize that same improperly obtained information over and over again." *Emergency Care Research Inst. v. Guidant Corp.*, No. 06-1898, 2006 WL 3541776, at *4 (E.D. Pa. Dec. 5, 2006). The NJTSA does not apply to a misappropriation occurring before the effective date of January 5, 2012, or to a continuing misappropriation occurring after the effective date. *Mu Sigma, Inc. v. Affine, Inc.*, No. 12–1323(FLW), 2013 WL 3772724, at *8 (D.N.J. July 17, 2013); *In re Vertis Holdings, Inc.*, 536 B.R. 589, 621–22 (Bankr. D. Del. 2015).

Nasdaq alleges that NTMEs Nos. 1–4 and MIAX misappropriated Nasdaq's "INET-related trade secret information." Dkt. 1, ¶ 26. Nasdaq asserts that this misappropriation began when NTME Nos. 1–4 forwarded emails to their personal email accounts while employed at Nasdaq. Dkt. 1, ¶¶ 29–32, 142. Nasdaq further alleges that the NTMEs "by working individually or collectively under MIAX and/or under the direction of one or more persons at MIAX, acquired, disclosed, used, and/or distributed the Nasdaq Trade Secrets to MIAX…." Dkt. 1, ¶ 150. Nasdaq's complaint does not allege that any "trade secrets" were *acquired* from

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Nasdaq on or after January 5, 2012, pleading instead that more than a dozen NTMEs had joined MIAX by "fall of 2011." *See* Dkt. 1, ¶ 28, 167.

Every act alleged since the enactment date is, at most, a "continuing misappropriation," to which the statute does not apply. 2011 N.J. Laws 161. A claim of misappropriation that begins prior to the enactment of the NJTSA and is still ongoing must fail. *In re Vertis Holdings, Inc.*, 536 B.R. at 622. Accordingly, Nasdaq's Count IX should be dismissed with prejudice.

iv. Nasdaq's Count VIII Must Be Dismissed Because No "Trade Secret" Existed at the Time the DTSA Was Enacted

A trade secret is no longer a trade secret once it is publicly disclosed, no matter how it was acquired. *Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1355 (Fed. Cir. 2009). The DTSA applies only to trade secrets that existed as of its enactment, May 11, 2016. *Hydrogen Master Rights, Ltd. v. Weston*, 228 F. Supp. 3d 320, 338 (D. Del. 2017) (a plaintiff must "sufficiently allege[] a prohibited 'act' occurring after May 11, 2016.") (quoting *Adams Arms, LLC v. Unified Weapon Sys.*, *Inc.,* No. 16-1503, 2016 WL 5391394, at *6 (M.D. Fla. Sept. 27, 2016)) (dismissing DTSA claim where only a conclusory allegation of continuing use and disclosure was alleged to have occurred on or after enactment).

Here, Nasdaq alleges that its "trade secret information is reflected in Figure 10 and columns 20 and 21 of the MIAX [U.S. Patent No. 8,868,461]." Dkt. 1, ¶

126.   Nasdaq does not allege the misappropriation of any "trade secret" different from what appears in the MIAX patent, which was publicly published on June 12, 2014. Dkt. 1, ¶¶ 33–34; Exh. 8, '461 patent. Thus, the alleged trade secrets were no longer "trade secrets" as of June 12, 2014—well before the DTSA was enacted—and cannot be the basis for a DTSA claim.

Avago Techs. U.S. Inc. v. Nanoprecision Prods., Inc., No. 16-03737, 2017 WL 412524 (N.D. Cal. Jan. 31, 2017), is instructive. As here, in *Avago*, the plaintiff alleged that the "trade secret" at issue was published before May 11, 2016, in the defendant's patent application. *Id.* at *2, 9. The *Avago* court found that no cause of action existed because publication occurred before the effective date of the DTSA. *Id.* at *9. Further, the court found that the publication of the patent application precluded a "continued use" claim; "[s]imply alleging that the same information was disclosed 'again' is not sufficient to avoid this result as 'disclosure,' by definition, implies that the information was previously secret." *Id.*

Nasdaq's DTSA claim must be dismissed with prejudice as it relies on the subject matter disclosed in MIAX's '461 patent, which could not have been a trade secret at the time the DTSA was enacted.[12] *Avago Techs,* 2017 WL 412524 at *9.

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[12] Nasdaq's complaint refers to "trade secrets" forwarded to personal accounts by NTMEs. Dkt. 1, ¶¶ 29–32. However, there is no allegation that this amounts to anything different from what is disclosed in the MIAX '461 Patent, and nor is there any specificity in alleging how MIAX purportedly continues to use that

B. THE PATENT ALLEGATIONS SHOULD BE DISMISSED

i. Nasdaq Asserts an Invalid Patent Claim (Count I)

Nasdaq asserts that MIAX infringes claim 4 of the '707 patent, a claim that was finally adjudicated to be invalid in *Chicago Board Options Exchange, Inc. v. International Securities Exchange, LLC*, No. 07-cv-0623 (N.D. Ill). Dkt. 1, ¶ 37; Exh. 14, March 9, 2013 Order (invalidating claim 4); Exh. 15, Final Judgment; Exh. 16, '707 patent. This litigation history should not have eluded Nasdaq since, right before it acquired the International Securities Exchange ("ISE") and its '707 patent (*see* Dkt. 1, ¶¶ 4, 13), ISE had been ordered to pay over six million dollars in attorneys' fees for asserting the '707 patent against a competing exchange. Exh. 17, March 31, 2016 Order. Even the most cursory pre-suit investigation would have revealed that this claim cannot be asserted.

Because there can be no infringement of an invalid patent claim, MIAX requests that the Court dismiss with prejudice Nasdaq's infringement allegations concerning claim 4 of the '707 patent, and award such other relief the Court deems appropriate. *See Blonder–Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 349–50 (1971); *see also Mendenhall v. Barber–Greene Co.*, 26 F.3d 1573, 1577-78 (Fed. Cir. 1994); *Endo Pharms., Inc. v. Impax Labs., Inc.*, No. CV 16-2526

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information after May 11, 2016. *See* Dkt. 1, ¶ 35. Conclusory allegations of continuing use and disclosure after May 11, 2016 are insufficient to meet the pleading standard. *Hydrogen Master Rights,* 228 F. Supp. 3d at 338 (dismissing DTSA claim).

(JLL), 2016 WL 6246773, at *5 (D.N.J. Oct. 25, 2016) (dismissing patent claims found invalid in prior action).

ii. Nasdaq Fails to Plead Plausible Patent Infringement Claims (Counts I-VII)

Nasdaq has accused four distinct legal entities of infringing its patents. But rather than explain how each defendant infringes—as the law requires—Nasdaq disregards the defendants' distinct legal status and different accused products, lumping its infringement allegations together. *See* Dkt. 1, ¶ 37 (using the catchall "Accused Exchange Platforms"); *see Zoetis LLC v. Roadrunner Pharmacy, Inc.,* No. 15-3193, 2016 WL 755622, at *5 (D.N.J. Feb. 25, 2016) (a claim for direct patent infringement must "connect the dots" between the patents and the accused products); *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (the plaintiff must plead "factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged.") (citing *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 556 (2007)); *see also Robern, Inc. v. Glasscrafters Inc.,* 206 F. Supp. 3d 1005, 1009-11 (D.N.J. 2016) (*Twombly/Iqbal* standard applies to patent infringement claims).

Nasdaq's allegations in Counts I-VII speak almost exclusively to MIAX Options. Each of those Counts is devoid of allegations "connect[ing] the dots" between the patents alleged to be infringed and defendants MIH and MIAX Technology. Similarly, with respect to defendant MIAX PEARL, the Counts

contain either threadbare allegations insufficient to constitute "factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged," *Iqbal*, 556 U.S. at 678; or no allegations at all. For example, in Counts I and II, Nasdaq merely alleges that MIAX PEARL has an order book (Dkt. 1, ¶ 39) and receives incoming orders (*id.* ¶¶ 40, 54). And with respect to Count V, that MIAX PEARL has a book (*id.* ¶ 93) and market makers and members send quotes and orders through MIAX interfaces (*id.* ¶ 95). The claims alleged to be infringed require much more than that. The allegations in Counts IV and VII likewise fall woefully short of alleging a facially plausible case of infringement against MIAX PEARL. *See* Dkt. 1, ¶¶ 80-81 (merely alleging that MIAX PEARL has a messaging interface), and ¶¶ 115-17 (merely alleging that MIAX PEARL operates on a computer network employing handoffs). With respect to the remaining Counts III and VI, Nasdaq fails to make any factual allegations specific to MIAX PEARL. *See* Dkt. 1, ¶¶ 65-75, 103-112. Moreover, Nasdaq fails to show each of the asserted claim elements are met in the accused MIAX Options exchange. For example, Nasdaq fails to show that MIAX Options receives separate quotes from a customer using unique identifiers, or sequential transmissions of indicator signals from a primary intended recipient in Counts III and IV, respectively. Nasdaq also provides no evidentiary basis in Count V with respect to MIAX Options having a configurable look-up table including a specific

entry table and a rule entry table. Accordingly, Counts I-VII should be dismissed as to defendants MIH, MIAX Technology, and MIAX PEARL and Counts III, IV and V should be dismissed as to MIAX Options.

> **iii.   Nasdaq's Allegations of Patent Infringement Must Be Dismissed with Prejudice Under 35 U.S.C. § 101 (Counts I-VII)**

Patent eligibility under § 101 is a "threshold inquiry" and solely an "issue of law" suitable for resolution on a motion to dismiss. *In re Bilski*, 545 F.3d 943, 950-51 (Fed. Cir. 2008), *aff'd sub nom Bilski v. Kappos*, 130 S. Ct. 3218, 3225, 3231 (2010); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362, 1364 (Fed. Cir. 2015) (affirming grant of motion to dismiss patent drawn to patent-ineligible subject matter). Indeed, "an early determination that the subject matter of the asserted claims is patent ineligible can spare both litigants and courts years of needless litigation." *I/P Engine, Inc. v. AOL Inc.*, 576 F. App'x 982, 995-96 (Fed. Cir. 2014) (Mayer, J., concurring); *see also Content Extraction And Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1349 (Fed. Cir. 2014) (explaining that where the court has a "full understanding of the basic character of the claimed subject matter," the question of patent eligibility may properly be resolved on the pleadings). The Federal Circuit has "repeatedly affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant discovery has commenced." *Cleveland Clinic Found. v. True Health*

Diagnostics LLC, 859 F.3d 1352, 1360 (Fed. Cir. 2017); *see also Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373–74 (Fed. Cir. 2016) ("We have repeatedly recognized that in many cases it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion.").

It is a bedrock principle of patent law that an idea, of itself, is not patentable. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972). Moreover, claims implementing an abstract idea through the use of generic computer components are not patent-eligible. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2357 (2014). In *Alice*, the Supreme Court applied the now-standard two-step analysis to find a patent directed to the intermediated settlement of financial transaction patent-ineligible under 35 U.S.C. §101. Under the Supreme Court's test, first, a court must determine "whether the claims at issue are directed to a patent-ineligible concept," such as an abstract idea. *Alice*, 134 S. Ct. at 2355. Second, if a claim is directed to a patent-ineligible concept, the court must evaluate whether there is an "inventive concept—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself." *Alice*, 134 S. Ct. at 2355 (internal quotations and citations omitted).

The asserted patents in this action do not pass muster under either prong of the patent-eligibility test set forth in *Alice.* Examining the patent claims at *Alice*

step one reveals that they are directed to the abstract concepts of trading financial instruments, a fundamental economic practice prevalent in our system of commerce for hundreds of years, and the collection, monitoring, and delivery of information, a day-to-day communications practice since humans began sharing information with one another. The claims fare no better at *Alice* step two because they are implemented with generic computer components and thus lack any inventive concept sufficient to elevate the claims beyond an unpatentable recitation of the abstract idea itself. As a result, the asserted patents are invalid as patent-ineligible under the *Alice* two-step test.

Further casting doubt on the adequacy of Nasdaq's pre-suit diligence is the United States Patent and Trademark Office's rejection of pending, related applications of the patents-in-suit on § 101 grounds. For the '707 and '093 patents, a related application also directed to trading financial instruments was finally rejected just last year by the Patent Office for claiming a patent-ineligible abstract idea, and Nasdaq *abandoned* the application in response.[13] And the day before this lawsuit was filed, Nasdaq received a *final* rejection of a patent application related

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[13] *See* Exh. 18, Feb. 3, 2016 Final Rejection, U.S. Patent Application No. 10/771,993; Exh. 19, Oct. 6, 2016 Notice of Abandonment, U.S. Patent Application No. 10/771,993.

to the '371 patent, for claiming a patent-ineligible abstract idea.[14] Because *Alice* and its progeny make clear that the patents-in-suit do not claim patent-eligible subject matter, Nasdaq's Counts I through VIII should be dismissed with prejudice.

1. The '707 and '093 Patent Claims are Invalid as Patent-Ineligible

The '707 patent is entitled "Automated Exchange for Trading Derivative Securities," and "relates generally to markets for the exchange of securities, and more particularly to an automated exchange for the trading of options contracts, that equitably allocates trades…." Exh. 16, '707 patent, at 1:13-17. The '093 patent, a continuation of the '707 patent, shares the same title, relates to the same subject, and has substantially the same specification. *See* Exh. 21, '093 patent, at 1:16-20. Both patents stem from a provisional application filed on November 3, 1998, U.S. Application No. 60/106,935 ("the '935 provisional"). Exh. 22. These patents issued long before *Alice* significantly tightened the standard for patent eligibility.

As described in the patents, prior art trading of financial instruments occurred in "floor-based environments" known as "open outcry" systems, where "trading takes place through oral communications between market professionals in a central location in open view of other market professionals." Exh. 16, '707

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[14] *See* Exh. 20, Aug. 31, 2017 Final Rejection, U.S. Patent Application No. 14/334,472.

patent at 1:20-29.[15] In these open outcry systems, "an order is typically relayed out to a trader standing in a 'pit.' The trader shouts out that he has received an order and waits until another trader shouts back a two-sided market (the prices at which they are willing to buy and sell a particular option contract), then a trade results." *Id.* at 29–34. Market professionals called "specialists" "accept orders, establish prices for a particular series of options and allocate trades among market professionals." *Id.* at 1:45-58; *see also* Exh. 22, '935 provisional, at 17 ("The specialist usually orchestrates who will trade against the incoming order."). Other market professionals called "market makers" call out "prices (quotations) at which they are both willing to buy (bid) and sell (offer) a particular option contract." Exh. 16, '707 patent, at 1:59–2:9. As the patents describe, "[w]hat generally happens is that market makers call out quotations which are manually entered into a system that tracks and displays the single best bid and best offer for the entire trading pit at any given time." *Id.* at 2:3-7. The open outcry systems also include a "book," which "may be maintained in a manual and/or electronic format," and which "is a record of outstanding public customer limit orders that can be matched against future incoming orders." *Id.* at 3:29-36.

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[15] *See also* Exh. 22, '935 provisional at 1-3 (describing floor-based exchanges).

Against this long history of floor-based exchanges, the '707 and '093 patents set forth an "automated exchange" to replicate in a general-purpose computer what humans have done on a trading floor. Claim 1 of the '707 patent is representative:[16]

> 1. An automated exchange for trading a financial instrument wherein the trade may be one of a purchase of a quantity of the instrument and a sale of a quantity of the instrument, the exchange comprising:
>
> an interface for receiving an incoming order or quotation to trade the instrument, the incoming order or quotation having a size associated therewith;
>
> book memory means for storing a plurality of previously received orders or quotations to trade a corresponding plurality of quantities of the instrument, the previously received orders and quotations each having a size associated therewith and the previously received orders including public customer orders previously entered for public customers and professional orders or quotations previously entered for one or more professionals;
>
> system memory means for storing allocating parameters for allocating trades between the incoming order or quotation and the previously received orders and quotations; and
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> processor means for allocating portions of the incoming order or quotation among the plurality of previously received orders and quotations in the book memory means based on the allocating parameters in the system memory means, wherein the allocating parameters include parameters for allocating a first portion of the incoming order or quotation against previously received customer

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[16] In determining patent eligibility under *Alice*, the Court need not analyze every claim of every asserted patent. Instead, so long as "all the claims are substantially similar and linked to the same abstract idea," the Court may identify and analyze a representative claim. *Content Extraction*, 776 F.3d at 1345 (affirming invalidation of four patents with a total of 242 claims based on analysis of representative claims).

orders and allocating a remaining portion of the incoming order or quotation preferentially against professional orders and quotations with larger size.

While veiled in patent and financial jargon, the claim reduces to an "automated exchange" that imitates the floor-based exchanges of old. The claimed "automated exchange," receives incoming orders or quotations, and allocates the incoming order among customer orders and market professional orders, just as trading would occur in the trading pit of a floor-based exchange, with, for example, a specialist (a specific individual floor trader) receiving orders and allocating that order among other floor traders. The claimed "book memory means" is simply a record of outstanding orders just like the book on floor exchanges, and in any event "amounts to electronic recordkeeping—one of the most basic functions of a computer." *Alice*, 134 S. Ct. at 2359. The part of the claim describing "allocating parameters" including "parameters for allocating a first portion of the incoming order or quotation against previously received customer orders and allocating a remaining portion … preferentially against professional orders and quotations with larger size" simply describes the idea of having rules for how a trade is allocated. There is nothing new about allocation rules, which have been implemented on exchanges for decades. When an exchange receives an incoming order, *e.g.*, an order to buy at a certain price, there has to be a procedure to allocate that order against multiple counterparts, *e.g.,* multiple orders to sell at the certain price. The

"allocation parameters" of claim 1 simply define the allocation rule to first allocate the incoming order against counterpart orders that are from public customers, and then allocate the remainder preferentially against counterpart professional orders and quotations with larger size. It is simply one of a myriad of known allocation schemes. *See* Exh. 22, '935 provisional, at 17 (explaining that on floor based exchanges, allocation is such that "any customer orders that are resting on the book at the time the order is traded will usually trade first in price, time priority").[17]

Alice Step 1

At *Alice* step 1, the court examines the "focus of the claimed advance over the prior art" to decide whether the claim's "character as a whole" is directed to excluded subject matter. *Affinity Labs of Texas, LLC v. DirecTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016). Here, claim 1 broadly recites "[a]n automated exchange for trading a financial instrument." Exh. 16, '707 patent, at claim 1. The automation of the longstanding economic concept of trading financial instruments on an exchange is unremarkable, as even long before the patents, "some processes that take place on [] floor-based exchanges have been automated or partially automated." *Id.* at 1:37-40.

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[17] *See also*, Exh. 23, ROBERT A. SCHWARTZ, RESHAPING THE EQUITY MARKETS: A GUIDE FOR THE 1990S 39–41 (1993) (explaining trading priority rules such as "size priority" and "The Priority of Public Orders.").

The concept of trading financial instruments on an exchange is "beyond question of ancient lineage."[18] *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014). Moreover, claim 1's use of "allocating parameters" does not make the claim patentable because it reflects nothing more than a fundamental economic practice long used in the trading pits of floor-based exchanges. Indeed, claim 1 is not meaningfully distinct from the longstanding economic concepts of "intermediated settlement" and "hedging" deemed to be abstract in *Alice* and *Bilski*. *See Alice,* 134 S. Ct. at 2356; *Bilski*, 561 U.S. at 611.[19]

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[18] *See* Exh. 24, Allan D. Grody & Hugues Levecq, *Past, Present and Future: The Evolution and Design of Electronic Financial Markets* 1 (Center for Digital Economy Research, Working Paper Series, Working Paper No. STERN IS-95-21, November 1993) ("The origins of today's principal exchange markets date back to the early seventeenth century…. In the New World, the New York Stock Exchange (NYSE) began as a collection of financiers and traders under the buttonwood tree.").

[19] Numerous other patents directed to similar fundamental economic practices and methods of organizing human activity have been held to be abstract. *See, e.g., OIP Techs.*, 788 F.3d at 1364   (invalidating claims directed to offer-based price optimization); *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) (invalidating claims directed to "processing an application for financing a purchase."); *LendingTree, LLC v. Zillow, Inc.*, 656 F. App'x 991, 995 (Fed. Cir. 2016) ("fundamental economic and conventional business practices are often found to be abstract ideas, even if performed on a computer."); *Kickstarter, Inc. v. Fan Funded, LLC*, 2015 WL 3947178, at *11 (S.D.N.Y. June 29, 2015), *aff'd*, 654 F. App'x 481 (Fed. Cir. 2016) (invalidating claims directed to crowd-funding).

ISE, Nasdaq's predecessor and the original assignee of the '707 and '093 patents, itself argued in a previous case about automated exchanges that business method

Alice Step 2

Turning to the second step of the *Alice* test, claim 1 does not include any "inventive concept" that adds significantly more to the abstract idea of trading financial instruments on an exchange. The patent states that the automated exchange is implemented with "general-purpose computers" and with software that "can be designed and constructed by computer programmers of ordinary skill." Exh. 16, '707 patent, at 8:44-55. As the patents explain, "many of the routine decisions made by professionals" are "defined in advance and applied automatically" on these computer components. *Id*. at 6:55-58. Thus, the claim simply implements the practices of floor-based exchanges on an "automated exchange" composed of generic components. A review of claim 1 confirms this. Jargon such as "interface," "book memory means," "system memory means," and "processor means," merely describe components "implemented on a general-purpose computer under the control of a software program" or "on a network of general-purpose computers." *Id.* at 8:44-52; *see also In re TLI Commc'ns LLC Patent Litig.,* 823 F.3d 607, 614–15 (Fed. Cir. 2016) (affirming invalidation of claims with means-plus-function limitations on a motion to dismiss); *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 100 F. Supp. 3d 405, 414

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patents in general have a "tenuous nature" and there is a "high likelihood of invalidation of such patents." Exh. 4, ISE's Motion to Stay.

(D.N.J. 2015) (invalidating claims without construction despite plaintiff's argument "that the Patents-in-suit arguably include several 'means-plus-function' claims, which requires the Court to study the Patent's specification and prosecution history"), *aff'd,* 636 F. App'x 1014 (Fed. Cir. 2016). Therefore, the claim's purported "automation" "comes from the capabilities of a general-purpose computer, rather than the patented method itself," and thus, the claims "merely implement an old practice in a new environment." *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1094-95 (Fed. Cir. 2016). The recitation of general purpose computer elements does not render a claim drawn to an abstract concept patent-eligible. *See Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017) ("Claims directed to generalized steps to be performed on a computer using conventional computer activity are not patent eligible."); *see also Credit Acceptance*, 859 F.3d at 1055 (noting that Federal Circuit "cases have made clear that mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology.") (citations omitted); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Canada (U.S.)*, 687 F.3d 1266, 1279 (Fed. Cir. 2012) ("Using a computer to accelerate an ineligible mental process does not make that process patent-eligible").

Moreover, no claim construction could save any claim because there is nothing in the specification of the '707 or '093 patent that even touches on an improvement to a computer itself. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (invalidating claims where "the focus of the claims is not on such an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools."). The claim's computer components are merely invoked as tools—*e.g.*, the "interface" is a tool for "receiving an incoming order;" the "book memory means" is a tool for "storing" previously received orders; the "system memory means" is a tool for "storing allocating parameters;" and the "processor means" is a tool for "allocating" the incoming order. *See id.* Accordingly, the claim recites no inventive concept because it "disclose[s] the use of general computer components" rather than "the use of an apparatus specific to the claimed invention."[20] *Intellectual Ventures I LLC v. Erie Indem. Co.*, No. 2017-1147, 2017 WL 5041460, at *6 (Fed. Cir. Nov. 3, 2017) (affirming dismissal).

Remaining Claims

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[20] Indeed, Nasdaq's predecessor ISE, has successfully invalidated multiple "automated exchange" patents belonging to others, arguing that the claims in those patents "do not purport to rely on ***any*** complex computer hardware," and instead rely on "generic computer functions" and "off-the-shelf software." See Exh. 25 at 9–11, Exh. 26 at 9–11, Exh. 27 at 9–10 (ISE's briefs before the Patent Trial and Appeal Board). ISE's arguments apply precisely to the '707 and '093 patent claims here.

The remaining claims of the '707 and '093 patents are "substantially similar and linked to the same abstract idea" as claim 1— trading financial instruments on an exchange—and thus, are similarly patent-ineligible. *Content Extraction*, 776 F.3d at 1348; *see also Cleveland Clinic Found.*, 859 F.3d at 1360 ("Where, as here, the claims 'are substantially similar and linked to the same' law of nature, analyzing representative claims is proper.").

For example, previously invalidated claim 4 in the '707 patent describes an exchange with a rule for allocating using a specific mathematical algorithm. But mathematical algorithms are abstract and the implementation of them does not give rise to patent eligible subject matter. *See Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146 (Fed. Cir. 2016) ("[W]e continue to treat[] analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.") (quotation marks omitted). Claims 12 and 40 describe an exchange with a rule called "small order preference," which is simply another variation on the mathematical algorithm for how incoming orders are allocated. Exh. 16, '707 patent at 6:4-9. Claim 13 describes an exchange with a process called tick worse, which involves allowing certain traders to "automatically" enter quotations instead of "manually entering another quotation." *Id.* at 19:10-30; *see Alice*, 134 S. Ct. 2359 (recognizing that "automated instructions" require no more than "a generic

computer to perform generic functions."). Claims 16 and 35 describe an exchange with a process called "derive or trade," which involves generating, or "deriving" a new order for market professional according to an algorithm, under certain conditions. Exh. 16, '707 patent, at 22:15–24:12. The process involves a series of simple steps all recited in a general fashion, including "determining," "computing," "deriving," and "storing" various trading information—in other words, "no more than routine steps of data collection and organization using generic computer components and conventional computer data processing activities." *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017). Nothing prevents a person from performing these steps in her head; in fact, it has been and continues to be done in the minds of traders on the floors of open outcry exchanges. Claims 22 and 56 describe an exchange with a process called away market protection, whereby the exchange checks if another exchange, an "away market," has a better price before executing a trade. Away market protection is something that long has been required by the Securities and Exchange Commission and, as the patents admit, implemented manually in options exchanges before the '707 patent. *See* Exh. 22, '935 provisional at 36; Exh. 16, '707 patent at col. 4:17-33. Claim 70 describes an exchange using a discriminator to determine what kind of entities to whom orders are associated, which simply embodies the abstract concept of identification—something the patents acknowledge happened on

trading floors. *See* Exh. 22, '935 Provisional at 40–41.   In the '093 patent, claims 1 and 3 describe an exchange with a trading process called "block trading," which involves trades of large size, something "handled manually by the trading crowd," in previous exchanges. *Id.* at 19. Claim 5 describes an exchange with a process called a "facilitation process," which relates to a type of trade where a firm trades with its own customers, and uses "an algorithm that allocates" in a particular way. Exh. 16, '707 patent, at 12:18-31. Again, this type of process was well known in the past. *See* Exh. 22, '935 provisional at 22–23. None of these concepts are anything but abstract ideas, reflecting trading practices implemented on an "automated exchange."

Similarly, the asserted dependent claims add immaterial, non-technical specifics that do not affect patent eligibility, for example naming a particular allocation scheme (*e.g.*, claim 2, reciting pro rata allocation), or naming the trade participants (*e.g.*, claim 10, reciting "primary" and "competitive" market makers.). *See buySAFE*, 765 F.3d at 1355 ("The dependent claims' narrowing to particular types of such relationships, themselves familiar, does not change the analysis [and] does not make the idea non-abstract for section 101 purposes.").

Nor do any of the claimed variations, in either the asserted independent or dependent claims, provide any inventive concepts under *Alice* step 2. The asserted claims recite the same generic components, interface, book, memory, processor

like claim 1—using functional language—and nothing indicates implementation on anything other than general purpose or off-the-shelf computers and software.[21]

Thus, the asserted claims of the '707 and '093 patents are directed to patent-ineligible subject matter and MIAX respectfully requests that the Court dismiss Nasdaq's Counts I and II with prejudice.

2.   *The '875 Patent Claims Are Invalid as Patent-Ineligible*

The '875 patent is entitled "Dual Quote Market System" and relates to receiving securities bid and offer quotes identified by source, and sending that information to a server for dissemination and display in the market. *See* Exh. 28, '875 patent abstract, 1:5-6 ("This invention relates to order display in a securities market.").   The '875 patent was prompted by the Securities and Exchange Commission's Order Handling Rules ("Rules"), which took effect in January 1997, nearly two years before the December 10, 1998 filing date of the '875 patent. Before the Rules, bids and offers were reflected for market makers' respective proprietary accounts. *Id*. at 1:22-24. After the Rules, a market maker also had to publicly reflect a customer order if it was "better than the market maker's proprietary interest" quote. *Id.* at 1:25-30.

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[21] Claim 70 recites a component called a "discriminator," but like the other components, it is described purely in terms of its function, and there is no indication that it is anything other than a generic computer or software. The specification is silent on any details of the discriminator.

The '875 patent claims simply present a generic way to comply with the Rules using conventional computers. They disclose receiving and sending separate quotes for a market maker's proprietary interest and a client's interest so the market can discern the quotes sources. *Id*. The claims' focus involves two steps: receiving quote information from a market maker reflecting its proprietary interest using "a unique market maker identifier corresponding to a market maker" and also receiving quote information from the market maker reflecting its client's interest using a "unique market maker agency identifier for the agency quote of the market maker." *Id.* at 1:58-66.

But, using unique identifiers to identify the quote source in a trading environment was nothing new. Indeed, the inventors concede that "a unique market maker identifier corresponding to a market maker," or "MMID," "is a ***conventional representation*** on the Nasdaq Stock Market ***for the proprietary account for a market maker***." *Id.* at 3:49-57 (emphasis added). And, the patent's purportedly novel unique market maker agency identifier (MMAID) is simply the conventional MMID with an extra character tacked onto the end of it, like the letter "A" for "agency." *Id.* at 4:36-41, 4:58-61.

The patent's disclosure for how to receive, enter, transmit and disseminate the agency quote is nothing new, either. The inventors admit that the agency quote can be received through traditional means such as "from a broker/market maker on

a telephone call, or from a customer over the Internet or via a telephone call to an

account executive." *Id*. at 5:36-40. And, the market maker can decide whether it

"wants to reflect [an] order as an agency quote" and manually enter such orders

through existing computers. *Id*. at 5:44-51. The computer systems through which

the agency quote information is entered are likewise conventional and well-known,

such as "current Nasdaq® terminal systems." *Id*. at 5:3-6. Also well-known are

the "servers," such as "the Nasdaq Workstation II®" that sends quote information

to other market makers, and "the Nasdaq Quotation and Dissemination Service"

that sends quote information "to the vendor quote community." *Id.* at 5:13-19.

Moreover, there is nothing new about how the agency quote is displayed or

processed: the inventors admit that the agency quote "is displayed in a similar

manner, as proprietary quotes" and "is processed in much the same way as a

proprietary quote," including through transmission to a conventional "service

delivery server" for forwarding to a conventional "host" for execution. *Id.* at 5:19-

23, 5:53-60, 6:4-14.

Claim 10 is representative. It provides:

10. A method for quoting securities executed over a networked
computer system, the method comprising:

receiving by a computer system, for display on a display device a bid
and offer proprietary quotes of a market maker for a security using a
unique market maker identifier corresponding to the market maker
that is different from market maker identifiers for other market
makers; and in response to a customer order,

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by the computer system, for display on the display device a bid and/or offer, as a separate quote, reflecting a [sic] order for a customer, using the unique market maker identifier and an additional symbol that indicates the separate quote is an agency quote for a customer of the market maker; and

sending the agency quote to a server that disseminates that agency quote with other quotes for the same security from the market makers.

Alice Step 1

Claim 10 recites a series of highly-generalized steps using conventional computers to receive securities quotes identified by source and send them to a server for dissemination to the market. Thus, claim 10 is directed to the abstract concept of collecting and disseminating quote information identified by source.

Federal Circuit precedent confirms claim 10 is directed to an abstract concept. For example, claim 10 is analogous to, and far more general than, the claims invalidated in *Elec. Power Grp.*, 830 F.3d at 1353. Although those claims specified the information sources within a power grid environment from which specific real-time information was to be collected and analyzed, this did not render the claims non-abstract because "merely selecting information, by content or source, for collection, analysis, and display does nothing significant to differentiate a process from ordinary mental processes…." *Id.* at 1355. Here, as in *Elec. Power Grp.*, claim 10's elements are primarily directed to identifying the source of information, namely, the source of a quote for securities. That is an abstraction.

Moreover, unlike the *Elec. Power Grp.* claims, claim 10 does not even include an analysis step, let alone the level of specificity of those claims. Further confirming it is abstract, claim 10 involves the longstanding economic practice of identifying the source of a securities quote, and thus is not meaningfully distinct from the many other patents directed to fundamental economic practices that courts have held to be abstract. *See, e.g.,* Exh. 28, '875 patent at 1:22-28 (explaining that long before application date, "the market maker represented the bid and offer quotes for a proprietary account" and reflected a customer order publicly if it "is better than the market maker's proprietary interest."); note 19, *supra* (collecting cases). And, it is analogous to other functionally-claimed patents for sending information that the Federal Circuit has held to be abstract. *See, e.g.*, *Two-Way Media Ltd.*, 874 F.3d at 1337 (finding claims to be abstract where they involved "routing information using result-based functional language."); *Affinity Labs*, 838 F.3d at 1258 (finding claims to be abstract where they recited "the function of wirelessly communicating regional broadcast content to an out-of-region recipient, not a particular way of performing that function.").

Moreover, the use of quote identifiers does not save claim 10 from abstraction, as confirmed by the Federal Circuit's recent decision in *Secured Mail Solutions LLC v. Universal Wilde, Inc.,* 873 F.3d 905 (Fed. Cir. 2017). There, the court held that using unique identifiers on mail objects was abstract because the

claims were "not limited by rules or steps that establish how the focus of the methods is achieved" and instead "embrace[d] the abstract idea of using a marking affixed to the outside of a mail object to communicate information about the mail object, i.e., the sender, recipient, and contents of the mail object." *Id.* at 911. Just as in *Secured Mail Solutions*, the simplistic identifiers of the '875 patent provide nothing concrete.

Finally, claim 10 does not improve computer functionality and thus lacks the features of claims upheld by the Federal Circuit at *Alice* step one. *See, e.g.*, *Enfish, LLC v. Microsoft Corp.,* 822 F.3d 1327, 1339 (Fed. Cir. 2016) (self-referential table that "improve[d] the way a computer stores and retrieves data in memory"); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (particularized set of rules for achieving automated lip-synchronization of 3-D characters that improved existing technological process); *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300 (Fed. Cir. 2016) ("an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)."); *Visual Memory LLC v. Nvidia Corp.*, 867 F.3d 1253, 1260 (Fed. Cir. 2017) ("an allegedly new, improved, and more efficient memory system."). Instead, it merely "receive[s]" and "send[s]" financial quote information identified by source, using

generic computers "invoked merely as a tool." *Enfish*, 822 F.3d at 1336. These are

the hallmarks of an abstract idea.

As drafted, claim 10 merely receives and sends an agency quote separately

from a market maker's quote for identification purposes when displayed. From

any perspective, therefore, claim 10 is directed to an abstract concept.

Alice Step 2

Considering claim 10 at *Alice* step two confirms that it lacks an inventive

concept. Its elements, taken both individually and as an ordered combination,

merely send financial quote information identified by source to a "server" after

"receiving [it] by a computer system." Exh. 28, '875 patent, claim 10. The

inventors admit that these servers and computer systems are conventional. *See*

Exh. 28, '875 patent, at 2:61–3:2 and Fig. 1 (referring to patented system as an

electronic securities trading market such as "The Nasdaq Stock Market®."); *Id.* at

5:3-6 (referring to workstation for entering agency quote as "hardware [that] could

be identical to current Nasdaq® terminal systems."); *Id.* at 5:13-19 (referring to

preexisting servers for disseminating the agency quote, such as "the Nasdaq

Workstation II®" and "the Nasdaq Quotation and Dissemination Service."). This

generic and conventional computer implementation is precisely what the *Alice*

court held to be non-inventive. *Alice*, 134 S. Ct. at 2359–60; *see also Credit*

Acceptance Corp., 859 F.3d at 1056 (use of generic computer components

including "a database, user terminal, and server" provided no inventive concept). Moreover, any computer involvement is merely to implement conventional processing and dissemination/transmission steps, which are plainly insufficient to transform an abstract idea into a patent-eligible application of that idea. *See, e.g., Two-Way Media*, 874 F.3d at 1339 (finding claim non-inventive where it "uses a conventional ordering of steps – first processing the data, then routing it, controlling it, and monitoring its reception – with conventional technology…."). And, "the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment," such as trading securities. *Alice*, 134 S. Ct. at 2358 (quoting *Bilski*, 561 U.S. at 610-11). Accordingly, claim 10 also fails *Alice* step two and is therefore invalid.

Remaining Claims

Because the remaining asserted claims of the '875 patent are substantially similar to representative claim 10 and linked to the same abstract idea, they too are invalid. *Content Extraction*, 776 F.3d at 1348. Claims 1 and 11 are even broader than claim 10 because they do not recite quote identifiers or transmission. Claims 2, 12 and 25 recite the purely functional steps of entering, sending and disseminating quotes. Claims 3, 6, 8, 13, 16 add using identifiers for quotes. None of these or any other claims of the '875 patent recites anything concrete or involves

anything other than routine steps and conventional computer components. Thus, the asserted claims 1-3, 6, 8, 10-13, 16, and 25 of the '875 patent are invalid.

3.   The '051 Patent Claims Are Invalid as Patent-Ineligible

The '051 patent is titled "Security-Based Order Processing Technique" and relates to routing incoming orders for securities in an electronic-based securities trading system. *See* Exh. 29, '051 patent, at 4:19-22. The idea at the heart of the '051 patent is simplistic—routing an incoming security order to a pre-assigned securities processor for processing the order. *See* '051 patent, abstract.

The routing steps of the '051 patent have long been performed by humans. For example, the patent recites receiving an order and "determin[ing] the security to which the order relates," for example through a ticker symbol. Exh. 29, '051 patent, at 5:26-30. The order is then matched to the securities processor assigned to that particular security by consulting a "configurable look-up table." *Id*. at 5:39-41. "Configurable" simply means that a human, edits the look-up table in a text or database file to identify the securities assigned to particular securities processors. *Id*. at 5:41-47, 6:50-62, 7:6-11. After matching the incoming security order to the assigned security processor by utilizing the human-configurable look-up table, the order is sent to the assigned securities processor. *Id.* at 5:52-54.

Moreover, the computer components for implementing the order routing system are generic and conventional. The inventors generically describe the order

routing system as being "incorporated into and part of a computerized trading system," "resid[ing] on a server" connected to a network, "not limited to the hardware embodiment" described in the specification and "find[ing] applicability in *any* computing or processing environment." *Id.* at 4:19-25, 4:34-36, 10:5-6 (emphasis added). The inventors further concede that the claimed system "may be implemented in hardware, software, or a combination of the two" and "in computer programs executing on programmable computers that each includes a processor and a storage medium…" *Id*. at 10:6-17; *see also* (*Id.* at 10:37-39) (system may be implemented with, *inter alia*, "general purpose microprocessors."). And, the "look-up table" that is the crux of the invention is unbounded. It can be "in various forms," including a text-based ASCII (i.e., American Standard Code for Information Interchange) file, a "database," or "other file arrangements/structures." *Id.* at 5:3-13. No technical details are provided for how the order routing system performs the claimed functionality.

Claim 13 is representative:

13. A computer implemented method of routing securities orders in an electronic market, the method comprising:

accessing, by one or more computer systems a configurable look-up table stored in a computer storage medium, in response to a received order involving a specific security, the configurable look-up table including assignment entries that assign each of a plurality of securities to one or more securities processors, each assignment entry determining which security processor will execute an order for that specific security, with the configurable look-up table including a

specific entry table and a rule entry table and with the rule entry table including one or more id-range entries that assign a range of securities to a specific securities processor;

determining by the one or more computer systems which securities processor the specific security is assigned to; and

sending the received security order to the securities processor to which the specific security is assigned for processing of the order involving the specific security.

Alice Step 1

Stripped of excess verbiage, claim 13 recites routing incoming security orders by ***analyzing*** an incoming order for its ticker symbol, ***determining*** its pre-assigned securities processor by accessing a look-up table with manually (human) input assignments, and ***routing*** the security order to its assigned security processor. Thus, claim 13 is directed to the abstract concept of analyzing and routing information. *See, e.g., Two-Way* Media, 874 F.3d at 1337–38 (holding that claim reciting "method for routing information using result-based functional language" was directed to an abstract concept). Confirming that it is indeed abstract, the steps of claim 13 could be, and have long been, performed by humans routing securities orders for trading in stock markets. *Cybersource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371–1372 (Fed. Cir. 2011) ("methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the 'basic tools of scientific and technological work' that are open to all.") (quoting *Gottschalk*, 409 U.S. at 67). For example, a human

could compare an incoming security order to the assigned trading pits for that security on a trading floor of an exchange, and communicate that order to the assigned trading pit via a human runner holding a paper order ticket, or by phone call to the assigned person processing that security via a table written on a piece of paper.

The Federal Circuit's opinions in *Cyberfone*, *LendingTree*, and *Secured Mail*, confirm that claim 13 is directed to an abstract concept. In *Cyberfone*, the court found that a method of obtaining data, separating components of the data, and sending the data to different destinations was directed to an abstract idea. *Cyberfone Sys. LLC v. CNN Interactive Grp., Inc.*, 558 F. App'x 988, 991–92 (Fed. Cir. 2014). The court noted that "using categories to organize, store, and transmit information is well-established." *Id.* Similarly, in *LendingTree*, the court found that a computer implemented "system" that received credit data entries from multiple users, and forwarded these entries to particular lending institutions based on matching the entries with selection criteria, was directed to an abstract concept. *LendingTree, LLC v. Zillow, Inc.*, 656 F. App'x 991, 993–96 (Fed. Cir. 2016). And in *Secured Mail*, the court found that claims involving receiving numerous identifiers affixed to a mail object, analyzing the identifier information, and transmitting this information to a specific mail recipient based on the information provided on the identifier were directed to an abstract idea. *Secured Mail*, 873

F.3d at 909–11.   In all of these cases, the claims were directed to receiving information, analyzing it, and routing it to a particular destination. Claim 13 of the '051 patent involves similar steps and is abstract for the same reasons.

Moreover, claim 13 recites no improvement to computer functionality and shares none of the features with claims upheld by the Federal Circuit at *Alice* step one. While the purported advantage of the so-called invention is the speed gained by splitting up trades amongst numerous securities processors (*id.* 3:60-63), this "speed" is achieved by a human administrator using his or her judgment to manually distribute trade volumes across processors.   *Id.* at 6:50-54.

Accordingly, the claims of the '051 patent are directed to an abstract idea.

Alice Step 2

Considering the elements of claim 13 individually and as an ordered combination confirms that they recite no inventive concept.   The computer components of claim 13 are purely generic and conventional, such as "computer systems" and a "computer storage medium." *See, e.g., Credit Acceptance Corp.*, 859 F.3d at 1056 (conventional computer components including "a database, user terminal, and server" held to be noninventive). And, the look-up table recited in the claims merely identifies the securities processors assigned to particular securities, and can take any of "various forms." *See* Exh. 29, '051 patent, at 5:3-13. It is not meaningfully distinct from analogous tables and comparison methods

that courts have held to be noninventive. *See, e.g.*, *Stanacard v. Rubard, LLC,* No. 12 Civ. 5176, 2015 WL 7351995, at *7 (S.D.N.Y. Nov. 18, 2015) ("lookup table" for connecting two people via long distance telephony was noninventive and "literally no more sophisticated than what Jenny the Operator did on *Lassie*."); *Gottschalk*, 409 U.S. at 66-67 (method for converting BCD numerals to pure binary numerals abstract and ineligible because it could "be done mentally" through use of conversion table). At best, claim 13 accelerates the fundamental economic (and manual) practice of matching a security order to its assigned processor for trading. But "relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible." *OIP Techs.*, 788 F.3d at 1363; *see also Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015) ("claiming the improved speed or efficiency inherent with applying the abstract idea on a computer [does not] provide a sufficient inventive concept"). Thus, claim 13 does not pass muster under either step of the *Alice* test and is invalid.

Remaining Claims

The remaining claims of the '051 patent are substantially similar to claim 13 and linked to the same abstract idea. Claims 1 and 25 are the system and "computer program product" analogues to claim 13. Claim 48 is nearly identical to claim 13. Claim 40 is similar to claim 1 except that a generic "memory" stores

the look-up table instead of a computer readable medium. Claims 2, 14, 26, 33 and 41 recite the purely functional processing of the received order. Claims 5–7, 9, 17, 18, 35–37, 44 and 45 recite that a single security or range of securities can be assigned to specific processors. Claim 49 recites accessing a "rule entry table" (which assigns a range of securities to a specific securities processor, *see id.* at 2:51-53) after accessing a "specific entry table" (which assigns a single security to a specific securities processor, *see id*. at 2:42-47).   And claims 29 through 32 involve identifying the processor to which the security is assigned, including by using an identifier in a generic header akin those held by courts to be conventional. *See, e.g., Easyweb Innovations, LLC v. Twitter, Inc.*, No. 11-CV-4550, 2016 WL1253674, at *28 (E.D.N.Y. March 30, 2016) (using an email header to identify a sender was "well-understood, conventional, routine activity."), *aff'd* 689 F. App'x 969 (Fed. Cir. 2017); *Intellectual Ventures II LLC v. JP Morgan Chase & Co.*, No. 13–cv–3777, 2015 WL 1941331, at *9–12 (S.D.N.Y. April 28, 2015) (analyzing data packet headers and payloads by applying "access rules" held to be abstract and non-inventive). None of these functionally-recited claims focused on analyzing and routing information rises above the abstract, and their generic computer implementation confirms they lack any inventive concept.

Thus, the asserted claims 1, 2, 5-7, 9, 13, 14, 17, 18, 25, 26, 29-33, 35-37, 40, 41, 44, 45, 48 and 49 of the '051 patent are invalid.

4.   The '827 Patent Claims Are Invalid as Patent-Ineligible

The '827 Patent, titled "Multi-Parallel Architecture and a Method of Using Same," is related to the '051 Patent, as both patents both claim priority to the same provisional patent applications. [22]   And, like the '051 patent, the '827 patent is directed to routing a specific order for securities to an assigned securities processor following largely the same steps. *See* Exh. 30, '827 patent, at 1:30-34, 6:57–7:20. The primary difference between the two patents is that the '827 patent contains additional disclosure and claims reciting a "prematching process" (analogous to the order "check" of the '051 patent at 5:55-63) for making sure "that the order/quote passes certain preliminary checks (e.g., order eligibility, order syntax, etc.)." Exh. 30, '827 patent, at 7:22-25; *see also* claims 2, 3, and 5–8. The specifics of the preliminary checks, and the action taken in response to a failure, are "configured" by a human administrator. *Id.*, 7:22-39. Aside from that, the asserted claims of the '827 patent are broader in some respects than those in the '051 patent, because not all require accessing a look-up table to determine which securities processor is assigned to a particular security. *See, e.g.,* claims 1, 34 and 67. And, just as with the '051 patent, the purported invention of the '827 patent is implemented with generic computer components like a "server," and/or "in any computing or

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[22] Both the '827 Patent and the '051 Patent claim priority to US Provisional Patent Applications Serial Nos. 60/385,979, filed on June 5, 2002, and 60/385,988, filed on June 5, 2002. *See* Exhs. 29, ('051 patent) and 30 ('827 patent).

processing environment," "in hardware, software, or a combination of the two," "in computer programs executing on programmable computers that each includes a processor and a storage medium," "as a machine-readable storage medium" with instructions that cause "a machine to operate to perform the functions" described, or "with memory devices in … general purpose microprocessors … among other electronic components." *Id.* at 14:15-45.   No programming or any meaningful technical detail is disclosed.

Claim 34 is representative. It provides:

34. A computer-implemented method comprising:

> processing attributable security interest messages generated by market participants on a plurality of securities processors of a server computer, the attributable security interest messages relate to securities traded on a securities trading system, with each individual security assigned to one or more of the securities processors based on a unique security identifier associated with the security; and

> routing, through an order routing system, each attributable security interest message to one of the securities processors according to the assignment.

Alice Step 1

Just like claim 13 of the '051 patent, claim 34 of the '827 patent is focused on routing information. But, claim 34 is even broader than claim 13 because it does not require the additional step of accessing a look-up table to determine which securities processor is assigned to the security. Claim 34 also does not improve computer functionality and instead merely uses generic computers "as a tool" to

implement its abstract idea. *Enfish*, 822 F.3d at 1336; *see* '827 patent, at 4:54-65, 6:1-10, 14:40-42, 14:15-18. Thus, claim 34 is directed to the abstract concept of routing information.

Alice Step 2

The elements of claim 34, considered individually and as an ordered combination, lack an inventive concept. The recited "server computer" that includes "securities processors" is generic and conventional. '827 patent at 14:7-45 (describing generic computer implementation). At best, claim 34 accelerates the routine task of routing a message. But, the use of generic computers to accelerate that abstract task does not transform claim 34 into patent-eligible subject matter. *OIP Techs.*, 788 F.3d at 1363; *Intellectual Ventures*, 792 F.3d at 1367; *Bancorp Servs*, 687 F.3d at 1279. Accordingly, claim 34 fails to meet either step of the *Alice* test and is invalid.

Remaining Claims

Remaining asserted claims 1–3, 5–8, 20–24, 33, 35–36, 38–43, 53–55, 57, and 67–70 are substantially similar to claim 34 and linked to the same abstract idea and thus are invalid for the same reasons. Claims 1 and 67 are merely the system and "computer program product" equivalents of method claim 34. Claims 20–24, 53–55, 57 and 68–70 recite generic functionality for determining the assigned securities processor for a security and routing a message to the processor, including

through the abstract process of using a look-up table, as in the '051 patent. Claim 33 recites the abstract process for transmitting "trade data" concerning the processing of the message. And, claims 2–8 and 35–43 recite various functional steps associated with a "prematching process" and for "validating" an attributable security interest message, both of which are specified by a human administrator and involve the abstract and conventional analysis of information. Thus, all asserted claims 1-3, 5-8, 20-24, 33-36, 38-43, 53-55, 57, 67-70 of the '827 patent are invalid.

5.   *The '506 Patent Claims Are Invalid as Patent-Ineligible*

The '506 patent, entitled "Recipient Status Indicator System," relates to monitoring the presence (or lack thereof) of indicator signals broadcast by an intended recipient of a security interest message to determine whether that recipient is offline. *See* Exh. 31, '506 patent, abstract. A broader or more abstract "invention" is difficult to imagine.

Operation of the so-called invention involves a generic broadcast server connected to any type of network transmitting "attributable security interest messages" across the network to a primary intended recipient. *Id.* at 2:46-53. The primary intended recipient repeatedly and sequentially broadcasts a primary indicator signal over the network. *Id.* at 3:19-22. The signal includes an identifier that identifies the transmitter, which in this case is the primary intended recipient.

Id. at 3:19-24. If the primary indictor signal is not received during a "defined period of time" or after "a defined number of non-received indicator signals," this indicates a communication failure. *Id.* at 3:43-56, 4:7-9. If there is a failure, the message can be redirected to a backup intended recipient. *Id.* at 2:15-17, 4:38-42.

The inventors concede that the '506 patent is implemented with generic and conventional computer components. For instance, the "broadcast server," "primary intended recipient," and "backup intended recipient" are generic devices that each include: "a storage device" that "may be hard disk drives, tape drives, RAID arrays, random access memories (RAM), or read-only memories" (*id*. at 3:2-11); and "at least one central processing unit (not shown) and main memory system (not shown)." *Id*. at 3:11-14. In other words, they are generic computers. The claimed "recipient status indicator system," in turn, is merely the collection of these generic devices. *Id*. at 2:43-45. Indeed, as the inventors concede, this system "may find applicability in any computing or processing environment," (*id*. at 6:46-48), may be implemented with "general purpose microprocessors" (*id.* at 7:12-15), and may be implemented "in computer programs executing on programmable computers that each includes a processor and a storage medium readable by the processor …." *Id.* at 6:54-57. As for the signal transmission and monitoring functions, the patent discloses no programming or any technical details. *See, e.g., id*. at 3:19-24, 3:40-43.

Claim 1 is representative. It provides:

1. A system comprising:

a broadcast server including:

a processing device;

main memory coupled to the processing device; and

a computer readable medium storing a computer program product, the computer program product comprising instructions to cause the processing device of the broadcast server to:

> receive a sequential transmission of an indicator signal that is repeatedly broadcast by a primary intended recipient system independently of receipt of attributable security interest messages, the indicator signal comprising an identification of the primary intended recipient system that is broadcasting the signal; and

> determine that the primary intended recipient system is offline whenever the indicator signal is not received from the primary intended recipient system for a defined failure period.

Alice Step 1

Claim 1 recites a generic computer system having instructions to cause a generic device to ***receive*** signals repeatedly broadcast from a primary intended recipient, and ***determine*** that the primary intended recipient is offline when a signal is not received for a defined failure period. In short, claim 1 is directed towards the abstract idea of monitoring the receipt of a signal to determine if a recipient is offline. Confirming it is abstract, claim 1 could be performed by one person calling another person to say she is available to receive a message, or even by the age-old practice of sending "smoke signals" to alert others of her presence. Using an "indicator signal" to perform this same function offers nothing concrete,

particularly because the patent discloses no technical details whatsoever for this signal.

Two-Way Media reinforces that claim 1 is directed to an abstract concept. There, claim 1 of the '187 patent recited "[a] method for transmitting message packets over a communications network" including the step of "controlling the routing of the stream of packets in response to ***selection signals received from the users***." *Two-Way Media*, 874 F.3d at 1334 (emphasis added). The Federal Circuit found the claim to be abstract because it "requires the functional results of 'converting,' 'routing,' 'controlling,' 'monitoring,' and 'accumulating records,' but does not sufficiently describe how to achieve these results in a non-abstract way." *Id*. at 1337 (citation omitted). And, not even plaintiff's proposed claim construction changed this result because it did not "provide any parameters for the 'signals' purportedly dictating how the information is being routed," confirming that these were merely "generic computer components." *Id*. at 1338.

Those words could have been written for this case. As in *Two-Way Media*, there are no technical details or parameters for the "signal" of claim 1 of the '506 patent, confirming it is functionally claimed and generic. The remaining claim elements are likewise generic and fail to recite any improvement to computer functionality. *See, e.g.*, '506 patent, at 6:47-48 and 7:10-17 (describing generic computer implementation). Accordingly, claim 1 is directed to an abstract concept.

Alice Step 2

Claim 1 also fails *Alice* step two. Only generic computer components are recited, such as "signal," "processing device," "memory," "broadcast server" and "computer readable medium." *See Planet Bingo, LLC v. VKGS LLC*, 576 F. App'x 1005, 1008-09 (Fed. Cir. 2014) ("'a computer with a central processing unit,' 'a memory,' 'an input and output terminal,' 'a printer,' … and 'a program…enabling' the steps of managing a game of bingo" merely generic). And, in combination, they simply provide for monitoring the receipt of signals to determine if a recipient is offline, which is analogous to, and even broader than, the ordered combination of steps for controlling the routing of information "in response to selection signals" found to be non-inventive in *Two-Way Media*. 874 F.3d at 1339; *see also West View Research, LLC v. Bayerische Motoren Werke AG*, 226 F. Supp. 3d 1071, 1080 (S.D. Cal. 2016) (claims reciting generic wireless devices sending an identifying "radio frequency (RF) signal" before being allowed access to content held noninventive); *Morales v. Square, Inc.*, 75 F. Supp. 3d 716, 727 (W.D. Tex. 2014) (claims involving generic hardware for "relaying a signal containing the sender's identity" held noninventive). The breadth of the claim and its potential preemption of most ways of receiving signals to determine if a computer is offline further confirms it is abstract.

Accordingly, because representative claim 1 of the '506 patent fails to meet either step of the *Alice* test it is invalid.

Remaining Claims

The remaining claims of the '506 patent are substantially similar and linked to the same abstract idea as claim 1. Claims 2 and 3 simply describe the "defined failure period," claims 4, 5, 12, 18 through 20, 24, 25 and 36 merely add functionally-claimed steps for redirecting or retransmitting messages to the backup recipient, claim 6 adds transmission of messages to the primary intended recipient, claim 15 has the broadcast server "configured" to perform the message transmission and signal receipt functions, claim 21 adds a generic "data bus" to the system, claim 26 restates claim 1 as a method claim, claims 29 and 31 merely store and identify transmitted messages, and claim 35 is a "computer program product" version of claim 1. None of these adds anything concrete or inventive to the underlying abstract idea of monitoring the receipt of a signal to determine if a recipient is offline. Thus, all of the asserted claims 1, 2, 4-6, 9, 12, 15, 18-21, 24-26, 29, 31, 32, 35, and 36 of the '506 patent are invalid.

6.   *The '371 Patent Claims Are Invalid as Patent-Ineligible*

The '371 patent is entitled "Method and System for Cancelling Orders for Financial Articles of Trades," and "relates to facilitating the cancellation of orders for financial articles of trade." Exh. 32, '371 patent, at 1:13-14. As described in

the patent, "cancellation of pending orders or transactions of a trading entity can be a burdensome process." For example, "for each pending order a cancellation instruction must be placed with the corresponding liquidity destination that is servicing that order." *Id.* at 1:44-46. The patent states that its solution "provides for the quick and bulk dissemination of one or more cancellation instructions of pending orders of financial articles of trades…." *Id.* at 4:56-60. The patent issued on February 26, 2013, and thus was not examined under the *Alice* standard.

Claim 1 of the '371 patent is representative (emphasis added):

1. A method for cancelling pending orders for financial articles of trade, comprising:

collecting, by one or more collection controllers, *data* from a plurality of liquidity destinations trading at least one financial article of trade, wherein the data comprises disparate data corresponding to associated liquidity destinations;

normalizing, by one or more processors, the collected *data* into a standardized form;

defining, by one or more processors, *a condition* of a trading market comprising one or both submitted and executed transactions of financial articles of trade over the plurality of liquidity destinations;

associating, by one of more processors, the defined condition with an entity;

identifying, by one or more processors, an event in the trading market matching the condition from the normalized *data*;

based on the matching, terminating, by one or more switches, at least one communication session between the entity and a corresponding liquidity destination; and

cancelling, by one or more processors, pending orders from the entity.

In short, the claim recites the abstract idea of collecting market information, identifying the occurrence of an event, and cancelling pending orders for trades based on that identification. The claim boils down to the routine steps of using a computer to collect data, identify and analyze that data, and act upon that data. Formal claim construction is not necessary to determine the patentability of the claim, and the issue is ripe for determination.

Alice Step 1

The overall focus of claim 1 is a "method for cancelling pending orders for financial articles of trade." Exh. 32, '371 patent, at claim 1. The trading of financial instruments is plainly a "fundamental economic activity," and *cancelling* a pending order for a trade is nothing more than a basic constituent part of that activity. *Alice,* 134 S. Ct. at 2356. The claim does not describe any improvement on a computer, network component, or any other technology that would potentially take the claim outside the realm of abstract idea. Instead, as the patent explains, the claimed invention "can be implemented using one or more computer-implemented software programs for processing data through a computer system. The computer system can be one or more personal computers, notebook computers, server computers, mainframes, networked computers (*e.g.*, routers), handheld computers, personal digital assistants, workstations, and the like." Exh.

32, '371 patent, at 5:22-28. On one occasion, the specification refers to possible implementations using "specialized hardware," but that specialized hardware is *neither described nor claimed.*

Tellingly, the patent admits that the actions recited in the claim are merely a series of ordinary data manipulation steps on a computer. As the patent explains:

> [T]erms such as '*defining*,' '*collecting*,' '*normalizing*,' '*identifying*,' '*terminating*,' *or the like refer to the actions and processes of a computer system* including an embedded system, or similar electronic computing device, or other suitable electronic circuitry, *that manipulates and transfers data….*

'371 patent at 5:63-6:5 (emphasis added). The recitation of data manipulation on computers does not take a claim outside the realm of abstract ideas. *See Capital One Fin. Corp.*, 850 F.3d at 1340.

Further, other patents of the same nature—involving collecting data, analyzing that data, and acting upon it—have been found abstract (and invalidated) by the courts for subject matter ineligibility. For example, claim 1 is analogous to the "concept of analyzing records of human activity to detect suspicious behavior," found to be abstract by the Federal Circuit in *FairWarning*, 839 F.3d at 1093–95 (invalidating claims directed to "collecting and analyzing information to detect misuse and notifying a user when misuse is detected."). Claim 1's cancelling of pending orders based on the matching of a condition is similar to the patent at issue

in *Bilski* which recited "initiating a series of transactions" based on market information. *Bilski*, 561 U.S. at 599.[23]

Alice Step 2

Claim 1 of the '371 patent does not have any "inventive concept" that transforms it into "substantially more" than the abstract idea. *Alice*, 134 S. Ct. at 2355. Instead, the claim simply describes the use of a computer as a tool to implement the idea of cancelling a pending order based on analyzing collected information. *See Elec. Power Grp.*, 830 F.3d at 1354; *see also Bancorp Servs.*, 687 F.3d at 1279 ("Using a computer to accelerate an ineligible mental process does not make that process patent-eligible").

"Nothing in [claim 1], understood in light of the specification, requires anything other than off-the-shelf, conventional computer, [and] network" technology. *Elec. Power Grp.*, 830 F.3d at 1355. The claim is implemented using

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[23] *See also Elec. Power Grp.*, 830 F.3d 1350 ("[W]e have treated collecting information, including when limited to particular content … as within the realm of abstract ideas…. In a similar vein, we have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category."); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1372 (Fed. Cir. 2017) ("We have determined that claims directed to the collection, storage, and recognition of data are directed to an abstract idea."); *Content Extraction*, 776 F.3d at 1347 (identifying "the abstract idea of 1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory").

generic computer systems and software. Exh. 32, '371 patent at 5:22-42.   The

environment in which these computer systems and software operate is a standard

"communication network" of various conventional "network devices (*e.g.*, routers

and switches)." Exh. 32, '371 patent at 7:14-20. Thus, the claim "disclose[s] the

use of general computer components" rather than "the use of an apparatus specific

to the claimed invention." *Erie Indem. Co.*, 2017 WL 5041460, at *6 (affirming

dismissal).

Indeed, the claim's overall concept of collecting information, identifying the

occurrence of events, and cancelling orders upon identification of an occurrence of

the event is not inventive because it is just a conventional activity. *See e.g.,*

Content Extraction, 776 F. 3d at 1348 (finding no inventive concept in "use of a

generic scanner and computer to perform well-understood, routine, and

conventional activities commonly used in industry."). For as long as there has

been trading, traders have been monitoring market information and looking out for

news that is bad for their pending orders, and cancelling those pending orders

when they identify that bad news. The idea of using the termination of a

communications session to trigger the cancellation of orders, as described in the

claim, is likewise not new. Instead, it is merely an "insignificant post-solution

activity"—activity that occurs after the computer identifies an event—that already

exists in the industry. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*,

566 U.S. 66, 71, 73 (2012). As the patent explains, in the prior art, liquidity destinations typically have in place a "Cancel Upon Disconnect" feature in which all open orders are automatically cancelled upon termination of a trader's connection. Exh. 32, '371 patent at 9:24-28. Thus, "the 'Cancel Upon Disconnect' process *already existing* for another purpose is exploited and invoked" by the claimed invention. *Id.* at 9:37-41 (emphasis added). Accordingly, claim 1 fails the *Alice* test.

Remaining Claims

The remaining asserted claims vary in language and specific features but at their core are all directed to the same abstract idea. For example, claims 7 and 11 add description about the terminating function. Claim 13 specifies the condition that is matched to trigger a cancellation. Claim 17 adds some general description, for example, on the location of the switches, and describes "stopping" future trading activity in addition to cancelling an order. Claim 20 generalizes the concept of the switch, describing "triggering" an action that cancels orders. Claims 23, 24, 25, 26, 28, and 30 "recite a handful of generic computer components configured to implement" the idea of cancelling a pending order. *Alice*, 134 S. Ct. at 2360. None of these claims deviate from the underlying routine steps of collecting data, analyzing that data, and acting on that data.

The remaining asserted claims also do not add any inventive concept sufficient for *Alice* step 2. The method claims (*i.e.*, claims 7, 11. 13, 17, and 20) do not recite any components that are improved. Similarly, the system claims (*i.e.*, claims 23, 24, 25, 26, 28, and 30) recite components that are "purely functional and generic"— for example, "communication device ***configured to,***" "a collector ***configured to***," "an event identifier ***configured to***," (claim 23); "[a]pparatus ***configured to***," "electronic circuitry ***configured to***," (claim 28). *See Alice*, 134 S. Ct. at 2360 ("Put another way, the system claims are no different from the method claims in substance. The method claims recite the abstract idea implemented on a generic computer; the system claims recite a handful of generic computer components configured to implement the same idea.") Nothing in the patent indicates that the claimed components are anything other than generic components such as conventional computers, software, and network switches.

Thus, the asserted claims of the '371 patent are directed to patent-ineligible subject matter and MIAX respectfully requests that Nasdaq's Count VII be dismissed with prejudice.

IV.   CONCLUSION

For the foregoing reasons, MIAX asks that Nasdaq's complaint be dismissed in its entirety, and for such other relief that the Court deems just and proper.

Dated: December 4, 2017   Respectfully submitted,

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